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Evaluating the Internet as a Medium for the Dissemination of Development Research

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GLOSSARY

Availability Requirement - The extent to which a webmaster expects to be able to guarantee the availability of their website.

Domain - A 'human readable' name that identifies one or more IP addresses. Domain names are used in URLs to identify particular Webpages.

Hit - A recorded request for a single file sent from a host-server to a client-server.

Log-file - An application recording the activity of a website in terms of the number of requests made from a host-server to a client-server.

Meta-tags - Keywords or search terms contained within a website's definition document, describing the content of that document.

Page Request - A series of hits that successfully retrieve the collection of files constituting a single webpage.

Server - A web server is a software programme that serves webpages to clients across the Internet.

Visit - A series of consecutive page requests made from a client to a server.

Website - A set of resources associated with the first or base URL for that site.

ACRONYMS

CSO	Civil Society Organisation
CSS	Cascading Style Sheet
DfID	Department for International Development, UK
GIF	Graphics Interchange Format
HTML	Hypertext Mark-up Language
ICTs	Information and Communication Technologies
IP	Internet Protocol
ISRG	Internet Studies Research Group
NGO	Non-Governmental Organisation
PDF	Portable Document Format
RTF	Rich Text Format
URL	Uniform Resource Locator
XML	Extensible Mark-up Language

SUMMARY

Evaluations of the Internet and Development have tended to focus on the extent to which website content has affected development activities. This research examines the usage of the medium itself, by conducting an **applied evaluative study** of selected websites disseminating development research findings. The paper describes how the evaluations were undertaken and **informs readers of the methods and tools needed** to conduct their own studies.

By providing a **replicable methodology** for assessing website performance this report intends to support people and organisations within International Development who are attempting to evaluate their website(s).

In the example evaluations shown, each website is assessed according to six key elements of website production, namely: **Architecture, Technology, Style, Content, Strategy and Management**. These components are examined using a combination of quantitative and qualitative research methods to **assess website performance and suitability for an international audience**.

The report can be read in three parts. PART I introduces readers to the **concept** of website evaluations and reviews previous approaches to their evaluation. In PART II a **methodology** for undertaking website evaluations is outlined, in conjunction with four illustrative **case studies**. PART III concludes the report by **distilling best-practices in website design**, as observed during the evaluation of eight websites.

Links to all online resources listed in this report can be found on the **project's website**, viewable at <http://www.urbandevelopmentFHDC.org/WebsiteEvaluation>. Website design features described in PART III of this report have contributed to the design of an Open Source Software website production system. Further details of the **Appropriate Website Factory** can be found at <http://www.appropriatesoftwarefoundation.org/AppropriateWebsiteFactory>.

PART I

INTRODUCTION

This project is not an evaluation of the impact of development research disseminated online. It does not compare research disseminated through websites with other dissemination activities. Nor does it examine in detail the behaviour of the recipients of research, to find out how the website's content has influenced their programmes or challenged their ideas.

The purpose of this evaluation is to take a sample of websites disseminating development research and to learn from them by assessing their usage of the medium. This knowledge is made explicit in terms of a set of **guidelines for the evaluation and design of websites appropriate for the dissemination of development research findings to an international audience.**

The evaluation looks at selected urban development research websites individually, based upon an analysis of six constituent components (note 1). These are:

Architecture	Technology
Style	Content
Strategy	Management

These six areas of inquiry are not seen as mutually exclusive. For example, both the semantics of textual content (the labelling of links) and the usage of technology can have a strong effect upon site navigability, as well as the general design of the system's architecture. Rather, these six broad areas of concern represent the entire mix of inputs necessary for the production of a website. For the purposes of this study a website is defined as a set of resources associated with the first or base URL for that site.

Each website component is evaluated using a combination of quantitative and qualitative research methods – including **automated tests, a webmaster survey, a user survey, telephone interviews and user tests** - to draw conclusions concerning the appropriateness of key qualities associated with that component. These twelve website qualities include:

Accessibility	Appearance
Authority	Availability
Clarity of purpose	Interactivity
Marketing	Navigability
Quality	Readability
Relevancy	Timeliness

Conclusions drawn about each website are assessed according to the Human and Financial Resources available to that website. Key research questions are:

- how effective have these websites been in using the available technologies to transfer the ideas and information they present?;
- what has been the effect of this technology and content on CSO users in different parts of the world?

By answering these questions it is hoped that the project will, in the longer term, **help build the capacity of CSOs as both consumers and producers of development research**. To achieve this aim the project has two verifiable objectives:

- **To provide a replicable methodology for evaluating websites disseminating development research;**
- **To support webmasters attempting to design and produce websites appropriate to the needs of their users.**

All best-practices in online research dissemination distilled from this research have been contributed to the design of an Open Source Software website production system. **The Appropriate Website Factory enables people and organisations within international development to produce professional standard websites** using a simple graphical editor, without prior knowledge of computer programming. The system automatically implements many aspects of best-practice in websites designed for the dissemination of research.

RATIONALE

Studies of the Internet and Development have focused largely on the contribution that ICTs can make to the processes of economic development (note 2). That is, they have chosen to look at the Internet deductively, through the lens of an economic theory, rather than at the Internet as it is actually used. In the language of communication theorists they have focused on the message or content of the Internet, rather than on the medium itself. This paper argues that such commentators have been premature.

Authors writing from this perspective have tended to adopt simplistic economic models, either to support or reject claims concerning the link between the application of Internet technologies and poverty alleviation (note 3). Such studies have failed to comprehend that the usage of ICTs by CSOs is much like any other capacity-building activity, in that its effect upon poverty alleviation is mediated through a host of internal organisational factors and externalities, one of which is the **appropriateness of the technologies being used**. There is,

therefore, a need for further analysis of the Internet as a medium, before any fruitful assessment of the impact of its message can be made.

Those researchers addressing the impact of Internet technologies upon internal organisational concerns have tended to generalise the impact and nature of the technologies available (note 4). For instance, some authors have focused pessimistically on the issue of access, in terms of cost, infrastructure and personnel (note 5). By assuming that this is entirely an 'On-Off' issue they have ignored the basic facts. More than one individual can use a single computer terminal; web content can be distributed and viewed off-line via CD-ROMs, e-mail and printed paper; whilst information located on the Internet can be incorporated into existing information systems.

Equally disturbing is the fact that more optimistic writers continue to claim *a priori* that the Internet will transform current processes of dissemination, networking and debate (note 6). Such conclusive arguments have precluded a rational **discussion of the ways in which websites can be improved as a mechanism for transferring information and knowledge to current CSO users.**

Scott McConnell's 2000 paper (note 7) is a refreshing exception to this polarised thinking. McConnell attempts to evaluate the impact of the Internet on African NGOs by examining the efficiency and effectiveness with which Internet-equipped NGOs use the technology to assist their unconnected partners. McConnell confirms that access to the Internet is not an 'On-Off' issue. However, his behavioural approach to the research – looking at the activities of individual knowledge gatekeepers within the organisations studied – prevents him from reflecting upon how the **effect of the Internet is, in part, contingent upon the nature of the technologies being used.** What, exactly, makes some websites more accessible than others?

Commentators who have addressed the complexities of access at the organisational level continue to be guilty of making unsubstantiated judgements about the nature and impact of the new technologies. Indeed few studies have based their conclusions upon an assessment of actual websites as they are used in a real-world environment. In his 2001 paper Kemly Camacho (note 8) sets out to look at how access to the Internet has effected the organisational structure and programme activities of NGOs in Central America, but there is little in his methodology regarding the specific experiences of NGO users. This leads Camacho to base his evaluation upon an inductive methodological approach, relying heavily upon grand economic and cultural theories to assess whether the Internet is useful or not. The results are sweeping assumptions about the ways in which the mechanics of the Internet "mirror the hegemony of the developed world, since in its current form the Internet is dominated by proprietary US software, the English language and Western styles of presentation." Thus

Camacho overlooks any opportunity the Internet might offer Southern users to produce and publish their own content and utilise non-proprietary software.

Since the Internet is here to stay, there is clearly a need for **websites to be evaluated, so that plans for website design can be improved to ensure that they meet the requirements of their users**. This must take place before any sensible discussion of the actual or potential impact of the Internet on poverty alleviation can take place.

PREVIOUS WEBSITE EVALUATIONS

There are **few documented evaluations of websites** produced either by or for CSOs (note 9). One hopes that large numbers of website managers within CSOs have undertaken basic evaluations of their websites. But certainly, very few evaluations have been published and even fewer provide a methodology that can be replicated. Few published evaluations have looked at the usage of development-focused websites from the perspective of their users, despite the wide availability of writings on the topic (note 10).

Existing website evaluation studies appear skewed between two methodological extremes: studies which attempt to evaluate the effectiveness of the medium in largely technical terms, and studies which attempt to qualitatively evaluate the impact of a website' s message.

Evaluators of CSO websites have tended to conduct a quantitative assessment of site statistics: counting hits or the number of pages requested. Whilst any estimate of site activity must refer to **log-file statistics**, taken alone, such techniques are now widely recognised to be a **misleading measure of website performance** (note 11). In isolation quantitative evaluations ignore qualitative factors such as user experience, content quality and other organisational concerns, which are the subject of this research.

Scott Anderson *et al* (note 12) makes clear the distinction between the two methodological approaches by providing a detailed critique of quantitative and qualitative research methods for the evaluation of websites. Topics covered include the pros and cons of log-file analysis and the limitations of user surveys. Anderson's paper does not, however, advocate any specific methodological approach. Its purpose is to describe the range of research tools and techniques available to website evaluators.

For the purposes of this research, Anderson' s paper makes it clear that whilst impact in its strictest sense is elusive, an accurate assessment of website effectiveness can be undertaken by utilising a range of well-defined research methods. To evaluate website outputs appropriately, this research adopts a range of both quantitative and qualitative research techniques to examine all

aspects of website design and usage, from the technology used through to the organisational processes involved and issues around the opinions of users.

Other website evaluations, such as those undertaken by Victor Sandoval at the Cole Central, Paris (note 13), have adopted an eclectic methodology to examine both quantitative and qualitative indicators of website performance. Yet Sandoval's methodology cannot be taken as a model for other evaluators to follow, since the quantitative aggregation of ill-defined criteria such as 'user friendliness' and 'first impression' leave us guessing as to the appropriateness of the questions being asked.

The same could be said of another well-intentioned study, namely the evaluation methodology proposed by Batsirai Chivhanga at the Internet Studies Research Group, London (note 14). Chivhanga claims that users of the ISRG web resource can evaluate the impact of their website using a predefined checklist. But evaluators attracted by the simplicity of the approach are left wondering how in reality - using this checklist - one can actually measure and assess site 'usability' or 'stability'. Simply asking questions, such as 'Is content thoughtfully collected?' however reasonable, is not good enough. Of whom are we asking the questions? By what method? And what tests can we design to ensure that we collect meaningful data for analysis? These are issues addressed by the present paper.

PART II

METHODOLOGY

In this section a methodology for the evaluation of websites is outlined. The chapter begins by deconstructing the constituent components of a typical website disseminating development research findings. A guide to undertaking a six to eight week evaluation is then described, detailing the methods and tools adopted by the project team. This is followed by four case study examples taken from a larger evaluative study of eight websites, undertaken as part of this research.

To examine the constituent elements of a website -- namely, **Architecture, Technology, Style, Content, Strategy and Management** -- a range of research techniques was adopted. These include **observation, automated tests, a webmaster survey, a user survey, telephone interviews and user tests**. The evaluation has been conducted using an eclectic methodology, in an attempt to gather information concerning both qualitative and quantitative aspects of website production and usage.

An **Evaluation Framework** (note 15) was used to develop a set of specific questions around each of the six website components mentioned. The framework shown in Table 1 is the basis for conducting the type of evaluation detailed in this report. For each component the evaluation attempts to assess a set of website 'qualities', related to that particular aspect of website design and production. The framework details the specific research question to be asked, and the appropriate research technique to be employed for each individual question.

Taking each component of the Evaluation Framework in turn:

- **ARCHITECTURE** refers to the structure of the website and the logic by which the pages interconnect. By examining this component the evaluation seeks to assess the **navigability** of the website, or how easy is it to find information.
- **TECHNOLOGY** refers to issues around the quality of the code and the appropriateness of any technologies used. We look at technology primarily to assess how **accessible** the site will be to an international audience with different software and hardware capacities.
- **STYLE** simply refers to the **appearance** of the layout and display of text and images on the website.
- **CONTENT** refers to issues around the **quality** of textual content and the degree to which the website supports **user interaction**.
- **STRATEGY** refers to the degree to which the site has met **stated objectives** concerning its target audience.
- **MANAGEMENT** relates to the **human and financial resources** that the site has at its disposal, which may constrain the outputs of the website.

A draft Evaluation Framework was circulated to participating webmasters for comments during the project's pre-investigative phase. Once updated, the framework was decomposed into its component questions. Each of these methodological phases is discussed in the section on Key Research Activities, where a methodology for the evaluation of websites is provided.

Table 1

WEBSITE EVALUATION FRAMEWORK: A GUIDE FOR EVALUATING WEBSITES DISSEMINATING DEVELOPMENT RESEARCH			
COMPONENT	QUALITY	QUESTION	METHOD
Architecture	Navigability	Does the website feature a table of contents, site map, or equivalent?	Observation
Architecture	Navigability	Can visitors reach the home page from any page?	Observation
Architecture	Navigability	Can visitors in one section move to another without returning to the home page?	Observation
Architecture	Navigability	Does the website's directory structure and syntax facilitate navigation?	Observation
Architecture	Navigability	Is there a search feature?	Observation
Architecture	Navigability	Does the site feature a relational navigational cue?	Observation
Architecture	Navigability	How easy do you find this website to browse?	User Survey
``	``	Very easy	``
``	``	Fairly easy	``
``	``	Not easy	``
Architecture	Navigability	Can users easily find a specified piece of information on this website?	Usability Test
Technology	Accessibility	Is the site navigable when images are disabled in the browser?	Observation
Technology	Accessibility	In what format(s) can available documents be downloaded?	Observation
Technology	Marketing	Does the website's definition document contain meta-tags for search engines?	Observation
Technology	Accessibility	Does the code contained within the site's definition document meet W3C standards?	Automated Test
Technology	Accessibility	Is the site's home page compatible with popular browsers?	Automated Test
Technology	Availability	What availability requirement do you have for your website?	Webmaster Survey
Technology	Availability	What is the capacity of your host to guarantee the level of availability you require?	Webmaster Survey
Technology	Accessibility	Is the load time for the website's home page excessive?	Automated Test

Style	Appearance	Is the formatting of textual content consistent?	Observation
Style	Appearance	Is the website' s look consistent?	Observation
Style	Appearance	How do you think the website looks?	User Survey
``	``	Unattractive	``
``	``	Fairly attractive	``
``	``	Very attractive	``
Style	Appearance	What do you think about the graphics?	User Survey
``	``	They are distracting	``
``	``	They are a little distracting	``
``	``	They are not distracting at all	``
Content	Interactivity	Can users submit content to the website?	Observation
Content	Readability	Does the textual content contain spelling mistakes?	Automated Test
Content	Timeliness	Is the date of last update provided?	Observation
Content	Interactivity	Can users subscribe to a newsletter?	Observation
Content	Authority	Is textual content referenced, where appropriate?	Observation
Content	Interactivity	Are the contact details of authors provided?	Observation
Content	Interactivity	Is there facility for users to comment on the site' s textual content?	Observation
Content	Interactivity	Does the website feature a user survey?	Observation
Content	Navigability	Are the site' s hyperlinks functioning?	Automated Test
Content	Editing	By what process is content selected?	Interview
Content	Editing	By what process is content edited?	Interview
Content	Relevancy	How useful do you find the site' s links?	User Survey
``	``	Very useful	``
``	``	Fairly useful	``
``	``	Not very useful	``
Content	Interactivity	Have you ever contributed to the content of this website?	User Survey
``	``	Yes	``
``	``	No	``
``	``	If ' yes' what form did this contribution take?	``
Content	Relevancy	Has this website helped improve your understanding of (...state issue)?	User Survey
``	``	A lot	``
``	``	A little	``
``	``	Very little	``
Content	Relevancy	How useful do you find the content of this website for your work?	User Survey
``	``	Very useful	``
``	``	Fairly useful	``

		Not very useful	
Content	Interactivity	Have you ever passed information from this website on to a colleague?	User Survey
		Yes	
		No	
Content	Interactivity	Have you ever contacted a contributor to this website?	User Survey
		Yes	
		No	
Content	Quality	How do you rate the standard of writing on this website?	User Survey
		Excellent	
		Adequate	
		Poor	
Strategy	Clarity	Does the site contain a definition of its target audience?	Observation
Strategy	Clarity	Does the site contain a statement of purpose?	Observation
Strategy	Marketing	Can the website be found within the top 10 listings of a major search engine by searching under the website' s name or type of business?	Automated Test
Strategy	Marketing	In what type of country are you based?	User Survey
		Northern	
		Southern	
Strategy	Marketing	What type of organisation are you from?	User Survey
		NGO	
		Academic	
		Independent	
		Governmental	
		Commercial	
		Multi-lateral	
		Other	
Strategy	Marketing	How did you find out about this website?	User Survey
		Another website	
		Via an electronic newsletter or e-mail	
		On off-line publication	
		Word-of-mouth	
Strategy	Marketing	How regularly do you visit this website?	User Survey
		Weekly	
		Monthly	
		Less than once each month	
Strategy	Marketing	What do you use this website for?	User Survey
		Networking	
		Research dissemination	
		Research	

		Keeping informed	
Strategy	Marketing	What is your role or job title within your organisation?	User Survey
Strategy	Marketing	How many page requests have you had over (...state period)?	Webmaster Survey
Strategy	Marketing	Have many documents have been downloaded over (...state period)?	Webmaster Survey
Strategy	Marketing	How do you promote your website?	Webmaster Survey
		Search engines	
		Directories	
		Links	
		Signed correspondence	
		e-newsletters	
		Off-line leaflets	
		Off-line presence at events	
Strategy	Marketing	How many unique visitors have you had over (...state period)?	Webmaster Survey
Strategy	Marketing	How many subscribers do you have?	Webmaster Survey
Strategy	Marketing	What two areas of your website, in addition to the home page, received most traffic over (...state period)?	Webmaster Survey
Management	Interactivity	Are person and organisation contact details provided for the website?	Observation
Management	Financial Resources	What is the total annual budget for the website?	Webmaster Survey
Management	Human Resources	How many total staff hours are devoted to your website each week?	Webmaster Survey
		Under 8	
		9 to 16	
		17 to 40	
		41 to 80	
		Over 81 hours	

KEY RESEARCH ACTIVITIES

The research activities described below represent six complementary methods for gathering the qualitative and quantitative data necessary to evaluate websites disseminating development research. Since each activity seeks to answer different types of questions, different stakeholders and an appropriate set of research tools are involved. The **relationship between 'website component' , ' question type' and ' research method' is shown in Table 1**

What follows is an overview of each research activity, with an explanation of the type of information sought and the tools necessary to collect it. The **aim of this**

section is to guide readers carrying out the investigative phase of a methodology for the evaluation of websites. The activities described are intended for the evaluation of existing websites and can be carried out in any sequence. For examples of how the resulting data can be analysed, readers are invited to see the four examples following this section of the report.

Observation

A high proportion of the questions shown in the Evaluation Framework can be objectively **answered by the evaluator whilst browsing the website** concerned. During the evaluation of the four websites assessed in the following section, up to three hours was spent browsing each site in an attempt to answer the series of questions shown in Table 2.

Each question is based upon a set of normative assumptions about what a 'quality' website should contain, but nevertheless their interpretation must be corroborated by other information gathered. For example, the absence of a search feature does not necessarily mean that a website will be difficult to navigate if, for example, the website contains only a small amount of information.

Observational research can be undertaken for your own website by simply browsing the site and noting down answers to each of the questions provided. In most cases the questions are simple and unambiguous, but the questions concerning 'directory structure', 'document downloads' and 'meta-tags', warrant further explanation.

In computer file systems, a directory is a named group of related files that are separated from other groups of files by the naming convention. The question in Table 2 concerning a website's directory structure seeks to find out whether the different groups of related files - or webpages - we see within the website are uniquely identified within the site's directory. By this we effectively mean: 'Does each webpage have a unique URL?'

Websites that uniquely identify each webpage can be navigated by using the browser's 'Address' field. More importantly, users wanting to direct other people (or computer programmes) to a specific webpage within a domain may do so by passing on the unique URL. This will direct new users precisely to the desired page, rather than to the root URL for that website.

By asking the question: 'In what format can documents be downloaded?' we attempt to assess whether the format used is likely to be appropriate for the document's intended audience. The large file size of PDF files and the fact that not all users have the latest version of Microsoft Word, for example, is likely to prevent a significant proportion of users from accessing documents of this type (note 16).

'Meta-tags' are keywords or search terms contained within a website's definition document. Used appropriately, they can help promote your website in search engines. An evaluator can check for their existence by using the 'View: Source' function on their browser.

Table 2

WEBSITE EVALUATION FRAMEWORK OBSERVATION		
COMPONENT	QUALITY	QUESTION
Architecture	Navigability	Does the website feature a table of contents, site map, or equivalent?
Architecture	Navigability	Can visitors reach the home page from any page?
Architecture	Navigability	Can visitors in one section move to another without returning to the home page?
Architecture	Navigability	Does the website' s directory structure and syntax facilitate navigation?
Architecture	Navigability	Is there a search feature?
Architecture	Navigability	Does the site feature a relational navigational cue?
Technology	Accessibility	Is the site navigable when images are disabled in the browser?
Technology	Accessibility	In what format(s) can available documents be downloaded?
Technology	Marketing	Does the website' s definition document contain meta-tags for search engines?
Style	Appearance	Is the formatting of textual content consistent?
Style	Appearance	Is the website' s look consistent?
Content	Interactivity	Can users submit content to the website?
Content	Timeliness	Is the date of last update provided?
Content	Interactivity	Can users subscribe to a newsletter?
Content	Authority	Is textual content referenced, where appropriate?
Content	Interactivity	Are the contact details of authors provided?
Content	Interactivity	Is there facility for users to comment on the site' s textual content?
Content	Interactivity	Does the website feature a user survey?
Strategy	Clarity	Does the site contain a definition of its target audience?
Strategy	Clarity	Does the site contain a statement of purpose?
Management	Interactivity	Are person and organisation contact details provided for the website?

Automated Tests

For certain mechanical aspects of website performance web-based analysis tools can be used (see Table 3). Automated website analysis methods have been criticised by writers on the topic, since they tell us nothing about the actual behaviour and experience of real users (note 17). Automated tests are useful,

however, to evaluate purely mechanical aspects of a website that would be tedious or impossible to measure by eye.

Tests for spelling errors, broken links and browser compatibility were undertaken using the online website analysis tool 'Dr HTML'. You can make use of this service by visiting <<http://www2.imagiware.com/>> (note 18). Dr HTML is a proprietary software programme, and the project team are unaware of any comparable Open Source Software website analysis packages. You can, however, run an analysis of a single webpage for free by visiting the company's website.

Using Dr HTML to test for compatibility errors between your website definition document and particular browsers may require a browser compatibility table, if the information is to be interpreted successfully. A detailed table showing browser type against coding standards for HTML, JavaScript and Frames, for example, can be found at <<http://hotwired.lycos.com/webmonkey/browserkit/>>.

The HTML validator available from the World Wide Web Consortium (note 19) - at <<http://validator.w3.org/>> - can be used for free to test the validity of the HTML contained within your website's definition document. By typing in the URL for a single webpage the service will check your website's HTML against recognised standards for HTML version 3.2 and version 4.01.

To measure the download times for the home pages of participating websites the website analysis tool *Bobby* was used. *Bobby* is a free web-based tool for the analysis of website mechanics, available at <<http://www.cast.org>>. The software will record the download time for a specified webpage using a 28,000 baud modem.

The response times measured by *Bobby* are only a rough indicator of the time experienced by actual website users. Times are dependent not only upon the type of modem used, but on the throughput of the server, the type and quality of the connection to the Internet, and the rendering speed of the user's browser and processor. This means that actual download times are likely to be greater than those recorded. A benchmark of 10 seconds is used to assess the excessiveness of a page's download time, since we know from research conducted in the USA that one-third of web-users will stop viewing a site if they have to wait longer (note 20).

Table 3

WEBSITE EVALUATION FRAMEWORK AUTOMATED TESTS			
COMPONENT	QUALITY	QUESTION	TOOL
Technology	Accessibility	Does the code contained within the site's definition document meet W3C standards?	W3C Validator

Technology	Accessibility	Is the site' s home page compatible with popular browsers?	Dr HTML
Technology	Accessibility	Is the load time for the website' s home page excessive?	Bobby
Content	Readability	Does the textual content contain spelling mistakes?	Dr HTML
Content	Navigability	Are the site' s hyperlinks functioning?	Dr HTML
Strategy	Marketing	Can the website be found within the top 10 listings of a major search engine by searching under the website' s name or type of business?	Google

Usability Test

Testing of actual users, undertaking real world tasks, is regarded to be one of the best methods for evaluating websites (note 21). Given the scope of this research and the geography of its participants the project team were unable to conduct use-case testing on a large scale.

Five INTRAC colleagues volunteered to complete a task-based questionnaire concerning website usability. Each user considered themselves to be frequent Internet users, although none had previously seen the websites in question. The five users were asked to find one specified piece of information for each of the websites under evaluation. The objective of the task was to find out how many clicks it took users, on average, to locate the required information. Upon searching each site the user manually noted down the number of clicks taken. This figure was then compared to the minimum number of clicks necessary to find that information.

The quantitative data collected using this test is a measure of website navigability, in that if the actual number of clicks taken by users is greater than the minimum number of clicks possible, it could indicate that information is difficult to find on that website. We know from previous website usability tests that testing five users is a sufficient number to gather meaningful data (note 22).

You can conduct a usability test, such as the one undertaken during the evaluation of the four websites described in this report, in the following way. Simply pick out some memorable text from within the website under study and, starting at the home page, note the minimum number of clicks it takes to find that information. Then construct a question that effectively leads people to find that information by encouraging them to make associations between the thing requested and the categories that might be used to describe it. For example, when evaluating the FHDC website, users were asked to find the name of the *barrio* in the Barrio Design Participation Project. A logical user, following a logical website structure, might look for this information by browsing the 'Projects' section and checking the 'Design Participation' sub-section.

The test allows us to test for any significant discrepancies between where a user might think a piece of information is held, and where it actually exists according to the website's Architecture and the categories used to describe it. To avoid illogical anomalies a minimum of five users should be tested.

User Survey

Writers on website usability have been critical of the use of online surveys as part of a methodology for evaluating websites (note 23). The basic problem is that there is often little relationship between what a user says they do in a survey and their actual behaviour online. Despite this evidence, the project team used an online survey to ask questions of their users for two important reasons: first, the alternative to undertaking a user survey, namely live usability tests, is unfeasible for a multi-national project of this nature; second, a survey is not an inappropriate research method if it **seeks subjective and selective opinions by design** (note 24).

A user survey can be used to ask both specific and factual or subjective questions of your users. It is the most **appropriate means of gathering information about the profile and experiences of users located internationally**. The following guidelines offer a description of how to make use of the survey shown and are not an explanation of how to conduct online surveys in general. Details of the survey questions asked can be found in Table 4. The questions used were designed to help evaluate websites disseminating development research findings, although certain key questions will be applicable for the evaluation of other website themes.

The user survey used for the four sample-evaluation websites is a variation of the questionnaire you can see on the project website at <http://www.urbandevelopmentFHDC.org/WebsiteEvaluation/UserSurvey.html>. To conduct an online survey successfully, questions would need to be coded into a form, so that responses can be submitted to the evaluator or another computer programme. The survey mentioned above was automatically rendered as a webpage following its definition in an XML document. Submissions are transported as an XML file to an online survey aggregator that produces basic descriptive statistics for each data set. This service is available for use by CSOs undertaking an evaluation of their website (note 25).

The websites evaluated during this project placed a link from their site to the survey on the project's domain. The questionnaire was posted for six weeks from the end of June to the first week in August 2001, and a total of just over 100 valid responses were returned.

Although the information collected tells us little about the user' s actual behaviour online, the questionnaire was an excellent tool for constructing an understanding of the user' s unique experience of website architecture, style and content. The subjective opinions of users were triangulated with other, more objective data, so that more general inferences about each website could be made.

Table 4

WEBSITE EVALUATION FRAMEWORK USER SURVEY		
COMPONENT	QUALITY	QUESTION
Strategy	Marketing	What type of organisation are you from?
''	''	NGO
''	''	Academic
''	''	Independent
''	''	Governmental
''	''	Commercial
''	''	Multi-lateral
''	''	Other
Strategy	Marketing	What is your role or job title within your organisation?
Strategy	Marketing	In what type of country are you based?
''	''	Northern
''	''	Southern
Strategy	Marketing	What do you use this website for?
''	''	Networking
''	''	Research dissemination
''	''	Research
''	''	Keeping Informed
Strategy	Marketing	How regularly do you visit this website?
''	''	Weekly
''	''	Monthly
''	''	Less than once each month
Content	Relevancy	How useful do you find the content of this website for your work?
''	''	Very useful
''	''	Fairly useful
''	''	Not very useful
Content	Quality	How do you rate the standard of writing on this website?
''	''	Excellent
''	''	Adequate
''	''	Poor
Content	Relevancy	Has this website helped improve your understanding of (...state issue)?
''	''	A lot
''	''	A little

		Very little
Content	Relevancy	How useful do you find the site' s links?
		Very useful
		Fairly useful
		Not very useful
Architecture	Navigability	How easy do you find this website to browse?
		Very easy
		Fairly easy
		Not easy
Style	Appearance	How do you think the website looks?
		Unattractive
		Fairly attractive
		Very attractive
Style	Appearance	What do you think about the graphics?
		They are distracting
		They are a little distracting
		They are not distracting at all
Content	Interactivity	Have you ever contributed to the content of this website?
		Yes
		No
		If ' yes' what form did this contribution take?
Content	Interactivity	Have you ever contacted a contributor to this website?
		Yes
		No
Content	Interactivity	Have you ever passed information from this website on to a colleague?
		Yes
		No
Strategy	Marketing	How did you find out about this website?
		Another website
		Via an electronic newsletter or e-mail
		On off-line publication
		Word-of-mouth

It is recommended that a user survey should be a permanent feature of your website, but you should keep it posted for at least two months before attempting to analyse the results. Surveys receive the largest response if they are prominent or offer an incentive. The websites receiving the highest number of returns during this project were those which created a pop-up hyperlink to the survey and which notified their members of its existence in an email.

Webmaster Survey

Participating webmasters were asked to complete a short questionnaire for their website concerning their site's log-file data and a number of internal organisational issues. Details of the questions asked are shown in Table 5. The questionnaire assumed that each webmaster had access to log-file data for their website over the six-month period from December 2000 to May 2001. It also assumed that each website's directory structure enabled webmasters to disaggregate this data according to unique URLs within each website. The survey was designed for websites held on a single server. The webmaster survey designed for this evaluation was e-mailed to a representative of each participating website.

Several commentators have warned website evaluators about the pitfalls of log-file data analysis (note 26). If misinterpreted, **log-file statistics can be a very misleading measure of site performance**. Taken alone, the **data tells us little about the exact number, identity and experiences of website users**. A fundamental rule of log-file analysis is to be precise and consistent when making use of any log-file data terms.

Terms commonly used in the analysis of log-file data are 'page requests' and 'unique visitors'. A **page request** is defined as a series of hits that successfully retrieve the collection of files constituting a single webpage. This statistic can be useful in that it is an **indicator of the level of activity around a website**. A **visit** refers to the number of consecutive page requests made from a client to a server in a single session. We use this information to make an **estimate of the number of people who have viewed the website**. Some log-file software disaggregates this information according to the number of *unique* visitors in a 24-hour period. But in all cases an **interpretation of log-file data regarding visitor numbers should be made cautiously**, since to most log-file analysis software a 'visitor' will include other software programmes or the same 'people' more than once. A common mistake is for the number of hits to be taken as a measure of site activity. Given that one hit refers to one recorded request for a single file, and that a single webpage containing numerous files will return several hits, the unit is clearly a very imprecise measure of the number of unique visitors.

For those readers whose website does not currently utilise log-file analysis software, *webalizer* is a free Open Source Software tool available at <http://webalizer.dexa.org/>.

An availability requirement refers to the extent to which a webmaster expects to be able to guarantee the availability of their website. Different website strategies will require different guarantees of availability. The purpose of the evaluation is to make explicit any discrepancy between the level of availability required and the level actually offered by the website's host. This term is not a feature of a log-file, data, if available, will come from the service level agreement between the website and the Internet service provider.

Table 5

WEBSITE EVALUATION FRAMEWORK WEBMASTER SURVEY		
COMPONENT	QUALITY	QUESTION
Technology	Availability	What availability requirement do you have for your website?
Technology	Availability	What is the capacity of your host to guarantee the level of availability you require?
Strategy	Marketing	How many page requests have you had over (...state period)?
Strategy	Marketing	Have many documents have been downloaded over (...state period)?
Strategy	Marketing	How many unique visitors have you had over (...state period)?
Strategy	Marketing	What two areas of your website, in addition to the home page, received most traffic over (...state period)?
Strategy	Marketing	How many subscribers do you have?
Strategy	Marketing	How do you promote your website?
''	''	Search engines
''	''	Directories
''	''	Links
''	''	Signatured correspondence
''	''	e-newsletters
''	''	Off-line leaflets
''	''	Off-line presence at events
Management	Financial Resources	What is the total annual budget for the website?
Management	Human Resources	How many total staff hours are devoted to your website each week?
''	''	Under 8
''	''	9 to 16
''	''	17 to 40
''	''	41 to 80
''	''	Over 81 hours

Telephone Interviews

Five minute telephone interviews were conducted with a representative from each website. Details of the questions asked can be found in the Evaluation Framework. The conversations were semi-structured and covered issues around the organisational processes by which textual content is selected, edited and reviewed.

The qualitative data gathered says little about website usability and technology, but can be usefully used to develop an **understanding of the internal organisational processes** by which the quality of website content is managed.

The interviews conducted for this study were short and semi-structured, covering two questions concerning **the processes by which textual content is selected and edited for the website**. Given that these guidelines are designed for visitors planning to undertake an evaluation of their own website, the interview process itself may not be necessary. However, evaluators should seek to make explicit these processes by asking such questions of their own work.

REVIEWS OF PARTICIPATING WEBSITES

The following **four website reviews** are outcomes of the investigative phase of the evaluation process. They have been included in this report to **show how data collected using the methodology outlined above can be interpreted**. Data collected from each of the six research activities has been regrouped according to the six key components of a website, namely: architecture; technology; style; content; strategy and management.

The aim of this project is to use a small sample to learn from and assess the practices of websites disseminating development research findings. To establish a manageable sample the evaluation takes as its focus *non-commercial English language websites disseminating exclusively urban development research findings of an international perspective from more than one organisation*.

A thematic approach to the research has been adopted to reflect the way in which users generally search for research findings on the web. Urban development issues are also widely regarded to be under-represented both on the Internet, and in terms of the discipline's ability to influence the agendas of major institutional donors (note 27). For methodological reasons it was essential that the evaluation reviewed a distinct sample of websites, but the results remain relevant for websites disseminating any form of development research.

A small number of questions in the Evaluation Framework, not relevant to the four websites evaluated here, is absent from the following reviews. In cases where the website uses frames, certain automated tests could not be undertaken. This is because unique URLs are required for each section of the website in order to make associations between the characteristic under evaluation and its corresponding webpage. Websites with the highest response rate to the user survey - namely, FHDC and NAERUS, with 53 and 22 responses respectively - were those which were able to post the hyperlink to the questionnaire for the full six weeks requested. They were also able to advertise the incentive of a free publication. The number of returns for ENSURE and RUDI was 4 and 7 respectively.

Each website was located during a four-part search process:

- Online searching using Google (note 28) under the phrases ' Urban Development Research' , ' Urban FHDC' , ' International Urban Development' and ' Urban Network' .
- Online searches within development portals (see note 29) and within the link sections of urban focused sites.
- Posting requests to urban development email lists or interest groups.
- Searching INTRAC' s database and library.

Once identified, a representative of each website was approached to take part in the study. These individuals have been labelled ' webmasters' , in reference to their function as the persons largely responsible for website outputs, although in actuality – within the broader concerns of their organisations – they are more likely to be called Editorial Directors or Information Officers.

By subscribing to the projects mail, list each webmaster committed themselves to: reviewing the evaluation framework; answering a questionnaire; answering questions during a telephone interview; and creating a hyperlink from their website to a user survey. Eight webmasters signed up to participate, and the reviews of four of these sites are included in this report (note 30).

ENSURE: European Network for Sustainable Urban and Regional Development Research, Vienna, Austria

<<http://www.european-association.org/ensure>>

Architecture

There is some evidence to suggest that ENSURE is a well-structured, easily navigable website. All respondents to the user survey stated that the website was either 'very easy' or 'fairly easy' to browse, whilst all participants in the usability test were able to find the requested piece of information in the minimum number of clicks necessary. Visitors can also take advantage of a detailed site map to orientate themselves.

One notable navigational problem is that visitors to one section of ENSURE must first navigate 'home' before they can browse to a new section of the website. This appears to be because individual sections within ENSURE do not have a unique URL and are each rendered within the same Frame set. This, in turn, is likely to be a reflection of the fact that ENSURE is itself a section within the European Association website, and does not have its own domain. Whilst visitors navigating through the Frame can reach the home page from any page on the site, its use means that different sections of the website are not uniquely identified within the site's directory structure. This not only problematises navigation between sections, but effectively means that any hyperlinks directed to ENSURE will lead to the initial Frame set, rather than a specific page within the website. This can make finding specific information difficult.

Table 6

RESPONSES FOR THE COMPONENT ARCHITECTURE FOR THE ENSURE WEBSITE				
QUALITY	QUESTION	RESPONSE		COMMENT
Navigability	Does the website feature a table of contents, site map, or equivalent?	Yes		Site map and section menu
Navigability	Can visitors reach the home page from any page?	Yes		
Navigability	Can visitors in one section move to another without returning to the home page?	No		Section menu in Frame for European Association domain
Navigability	Does the website' s directory structure and syntax facilitate navigation?	No		URL for each section not uniquely identified
Navigability	Is there a search feature?	No		
Navigability	Does the site feature a relational navigational cue?	No		
Navigability	How easy do you find this website to browse?	Southern Respondents	Northern Respondents	
	Very easy	2	0	
	Fairly easy	0	2	
	Not easy	0	0	
Navigability	Can users easily find a specified piece of information on this website? Indicate the number of clicks taken to find out where the Event ' Making Sustainable Regional Development Visible' is held.	Number of Clicks taken per user 2 - 2 - 2 - 2 - 2		Minimum number of clicks, 2

Technology

Several technical concerns may impede site access for an international audience attempting to view the ENSURE website. ENSURE' s site definition document fails to validate as either HTML version 3.2 or version 4.0, according to W3C standards. This can cause both rendering and navigation problems in certain browsers. An analysis of the home page revealed four browser support conflicts

that impede access to users with a variety of browsers such as Netscape Navigator 3.0, 4.0 and 6.0. Moreover, documents can only be downloaded in PDF and Word for Windows 98 format. PDF files can be slow to download and problematic to manipulate once accessed. Given that in 1998 only 17% of users globally possessed Word for Windows 98, it is likely that a significant proportion of users will still be unable to access these files (note 31).

Using Frames without an all text alternative, the site becomes un-navigable when images are disabled in the user's browser. Frames can also be slow to download, but the download time for ENSURE's home page, at six seconds using a 28,800 baud modem, did not seem to be badly affected.

Table 7

RESPONSES FOR THE COMPONENT TECHNOLOGY FOR THE ENSURE WEBSITE			
QUALITY	QUESTION	RESPONSE	COMMENT
Accessibility	Is the site navigable when images are disabled in the browser?	No	No all text alternative
Accessibility	In what format(s) can available documents be downloaded?	PDF/ Word ' 98	
Marketing	Does the website's definition document contain meta-tags for search engines?	No	
Accessibility	Does the code contained within the site's definition document meet W3C standards?	No	Test against HTML versions 3.2 and 4.0
Accessibility	Is the site's home page compatible with popular browsers?	4 Browser support conflicts	Problems in I.E 3.*, N.S. 3.*, 4.*, 6.*
Availability	What availability requirement do you have for your website?	NA	
Availability	What is the capacity of your host to guarantee the level of availability you require?	NA	
Accessibility	Is the load time for the website's home page excessive?	No	6 seconds

Style

One benefit of using Frames is that the site's layout and appearance are consistent between pages. The majority of respondents felt that ENSURE was an attractive website.

Table 8

RESPONSES FOR THE COMPONENT STYLE FOR THE ENSURE WEBSITE		
QUALITY	QUESTION	RESPONSE

Appearance	Is the formatting of textual content consistent?	Yes	
Appearance	Is the website's look consistent?	Yes	
Appearance	How do you think the website looks?	Southern Respondents	Northern Respondents
''	Unattractive	0	0
''	Fairly attractive	1	0
''	Very attractive	1	2
Appearance	What do you think about the graphics?	Southern Respondents	Northern Respondents
''	They are distracting	0	0
''	They are a little distracting	1	2
''	They are not distracting at all	1	0

Content

There is strong evidence to suggest that whilst the content of the ENSURE website is of a high standard, its audience and the intensity of interaction with its readership are limited.

All users described the standard of writing on the ENSURE website as 'excellent.' Users also stated that the content was fairly useful and relevant to their work. One user stated that the content had helped improve his understanding of urban issues 'a lot', compared to three respondents for whom the site's content still managed to help them 'a little'. Moreover, only one user stated that the site's links were 'not very useful'. No spelling mistakes or grammatical errors were found, and all text is referenced where appropriate.

The majority of the site's content is contributed by a small number of participants, and ENSURE's lack of interactivity is perhaps a reflection of the site's high degree of specialisation. As with some of the other websites reviewed during this study, much of ENSURE's substantive textual content, such as articles and papers, are a by-product of the organisation's traditional selection and editing processes, carried out during the proceedings of a conference. Given the favourable evidence above, it would perhaps be beneficial if users could make more use of this content by being able to interact more fully with the site. No online facilities are available for users to submit either content or comment upon the work of others, although, where appropriate, the contact details of authors are provided.

Table 9

RESPONSES FOR THE COMPONENT CONTENT FOR THE ENSURE WEBSITE			
QUALITY	QUESTION	RESPONSE	COMMENT
Interactivity	Can users submit content to the website?	No	Content specific to network

				conference
Readability	Does the textual content contain spelling mistakes?	No		
Timeliness	Is the date of last update provided?	No		Posted content is dated
Interactivity	Can users subscribe to a newsletter?	No		
Authority	Is textual content referenced where appropriate?	Yes		
Interactivity	Are the contact details of authors provided?	Yes		
Interactivity	Is there facility for users to comment on the site' s textual content?	No		No FHDC type facility to comment on particular research
Interactivity	Does the website feature a user survey?	No		
Navigability	Are the site' s hyperlinks functioning?	NA		No links page
Editing	By what process is content selected?	NA		Question and response discursive
Editing	By what process is content edited?	NA		Question and response discursive
Relevancy	How useful do you find the site' s links?	Southern Respondents	Northern Respondents	
``	Very useful	1	0	
``	Fairly useful	1	1	
``	Not very useful	0	1	
Interactivity	Have you ever contributed to the content of this website?	Southern Respondents	Northern Respondents	
``	Yes	0	0	
``	No	2	2	
``	If ' yes' what form did this contribution take?	NA		
Relevancy	Has this website helped improve your understanding of urban issues?	Southern Respondents	Northern Respondents	
``	A lot	1	0	
``	A little	1	2	
``	Very little	0	0	
Relevancy	How useful do you find the	Southern	Northern	

	content of this website for your work?	Respondents	Respondents	
``	Very useful	0	0	
``	Fairly useful	2	2	
``	Not very useful	0	0	
Interactivity	Have you ever passed information from this website on to a colleague?	Southern Respondents	Northern Respondents	
``	Yes	1	0	
``	No	1	2	
Interactivity	Have you ever contacted a contributor to this website?	Southern Respondents	Northern Respondents	
``	Yes	1	0	
``	No	1	2	
Quality	How do you rate the standard of writing on this website?	Southern Respondents	Northern Respondents	
``	Excellent	2	2	
``	Adequate	0	0	
``	Poor	0	0	

Strategy

The target audience for the site is defined broadly as "scientists of different backgrounds that are active or interested in the field of sustainable regional development research". From the small number of responses, users do indeed appear to be researchers from both NGOs and academic institutions, based in both the North and South.

Given this potentially broad audience and the quality of ENSURE' s content, it is surprising that the number of recorded visits over a six-month period is a mere 276; especially since the site is advertised through search engines, directories and cross-linking. This may be an inevitable consequence of the website' s specialist content, but one additional explanation is that the number of visitors is low because the site does not have an independent domain name. Prospective viewers using a search engine to find the site will be unable to locate it simply by typing in the acronym ENSURE, or the details of any of its associated activities. Viewers arriving at the site as a result of ENSURE' s marketing must first navigate through the European Association domain to locate the ENSURE content they are interested in.

Table 10

RESPONSES FOR THE COMPONENT STRATEGY FOR THE ENSURE WEBSITE			
QUALITY	QUESTION	RESPONSE	COMMENT

Clarity	Does the site contain a definition of its target audience?	Yes		
Clarity	Does the site contain a statement of purpose?	Yes		
Marketing	Can the website be found within the top 10 listings of Google by searching under the website' s name or type of business?	No		Not have own domain
Marketing	In what type of country are you based?	--		
``	Northern	2		
``	Southern	2		
Marketing	What type of organisation are you from?	--		
``	NGO	2		
``	Academic	0		
``	Independent	0		
``	Governmental	2		
``	Commercial	0		
``	Multi-lateral	0		
``	Other	0		
Marketing	How did you find out about this website?	Southern Respondents	Northern Respondents	
``	Another website	1	2	
``	Via an electronic newsletter or e-mail	1	0	
``	On off-line publication	0	0	
``	Word-of-mouth	0	0	
Marketing	How regularly do you visit this website?	Southern Respondents	Northern Respondents	
``	Weekly	1	0	
``	Monthly	1	1	
``	Less than once each month	0	1	
Marketing	What do you use this website for?	Southern Respondents	Northern Respondents	
``	Networking	1	0	
``	Research dissemination	0	0	
``	Research	0	1	
``	Keeping informed	1	1	
Marketing	What is your role or job title within your organisation?	Researcher/ Planner		Frequency 3, 1 respectively
Marketing	How many page requests have	NA		Not available

	you had over the period 1 December 2000 to 31 May 2001?		from log-file data.
Marketing	Have many documents have been downloaded over the period 1 December 2000 to 31 May 2001?	NA	--
Marketing	How do you promote your website?	--	
``	Search engines	Yes	
``	Directories	Yes	
``	Links	Yes	
``	Signature correspondence	No	
``	e-newsletters	No	
``	Off-line leaflets	Yes	
``	Off-line presence at events	No	
Marketing	How many unique visitors have you had over the period 1 December 2000 to 31 May 2001?	276	
Marketing	How many subscribers do you have?	NA	
Marketing	What two areas of your website, in addition to the home page, received most traffic over the period 1 December 2000 to 31 May 2001?	NA	

Management

ENSURE' s limited budget of US\$1,250 per annum, and a total staff input time of less than eight hours per week, are a clear limiting factor in terms of the development of the site and any decisions to increase the site' s functionality and strategic scope.

Table 11

RESPONSES FOR THE COMPONENT MANAGEMENT FOR THE ENSURE WEBSITE		
QUALITY	QUESTION	RESPONSE
Interactivity	Are person and organisation contact details provided for the website?	Yes
Financial Resources	What is the total annual budget for the website, in US \$?	1,285
Human Resources	How many total staff hours are devoted to your website each week?	--

``	Under 8	Yes
``	9 to 16	--
``	17 to 40	--
``	41 to 80	--
``	Over 81 hours	--

Conclusions

Analysis of the ENSURE website shows that despite the site' s excellent content and pleasing appearance, visitor numbers remain low. Whilst this is in part an inevitable result of the site' s specialisation, a number of technical and usability problems have been identified that could exclude users.

Recommendations

- Create an independent domain
- Tidy up the HTML
- Consider providing an alternative to Frames
- Ensure that documents can be downloaded as either HTML, plain text or an earlier version of word
- Insert a date of last update stamp

FHDC: Habitat in Developing Countries, Turin, Italy

<<http://www.FHDChabitat.polito.it>>

Architecture

There is mixed evidence to suggest that FHDC is a well-structured, easily navigable website. The vast majority of respondents found the site either ' fairly easy' or ' very easy' to browse, there is a detailed table of contents, and users can reach the home page from any page on the website. However, while the structural essentials for good navigability are in place, the usage of best-practice was not found to be consistent, and three out of five users during the usability test were unable to locate a specified piece of information in the minimum number of clicks necessary.

On most pages within the website the changing colour of selected section links is used as a visual cue, orientating users around the site, and - again, from most pages - users can navigate to a different section of the website without returning ' home' . But these features are, for the most part, only available for the first two levels of the system' s hierarchy or architecture, which may disorientate users. For example, when navigating from the home page to within the Design Participation section, within two clicks the viewer is taken through a consistent 'Frameset' into a section that lacks many of the features of good navigability

previously present. Given that the system' s directory structure is well formed and facilitates navigation, it is possible, however, to update these sections without having to make fundamental updates to the website' s overall architecture.

Table 12

RESPONSES FOR THE COMPONENT ARCHITECTURE FOR THE FHDC WEBSITE				
QUALITY	QUESTION	RESPONSE		COMMENT
Navigability	Does the website feature a table of contents, site map, or equivalent?	Yes		Section menu and table of contents
Navigability	Can visitors reach the home page from any page?	Yes		Using hyperlinked logo
Navigability	Can visitors in one section move to another without returning to the home page?	Yes		Using section menu, available to two levels within the system hierarchy
Navigability	Do the website' s directory structure and syntax facilitate navigation?	Yes		URL for each section uniquely identified to two levels within the directories hierarchy
Navigability	Is there a search feature?	No		
Navigability	Does the site feature a relational navigational cue?	Yes		Section titles illuminated in menu when selected
Navigability	How easy do you find this website to browse?	Southern Respondents	Northern Respondents	
	Very easy	14	10	
	Fairly easy	10	15	
	Not easy	1	3	
Navigability	Can users easily find a specified piece of information on this website? Indicate the number of clicks taken to locate the name of the barrio in the Barrio Design Participation Project.	Number of clicks taken per user 2 - 2 - 5 - 4 - 3		Minimum number of clicks, 2.

Technology

Some technical concerns may impede site access for an international audience attempting to view the FHDC website. FHDC' s site definition document does not validate as either HTML version 3.2 or version 4.0, according to W3C standards. This can cause both rendering and navigation problems in certain browsers. Moreover, an analysis of the home page revealed six browser support conflicts that impede access to users with Netscape browsers, whilst available documents can only be downloaded as PDF files. The download time for FHDC' s home page, at 17 seconds using a 28,800 baud modem, may be marginally excessive for some users.

Table 13

RESPONSES FOR THE COMPONENT TECHNOLOGY FOR THE FHDC WEBSITE			
QUALITY	QUESTION	RESPONSE	COMMENT
Accessibility	Is the site navigable when images are disabled in the browser?	No	No all text alternative
Accessibility	In what format(s) can available documents be downloaded?	PDF	
Marketing	Does the website' s definition document contain meta-tags for search engines?	Yes	Extensive
Accessibility	Does the code contained within the site' s definition document meet W3C standards?	No	Test against HTML versions 3.2 and 4.0
Accessibility	Is the site' s home page compatible with popular browsers?	6 Browser support conflicts	Problems in N.S. 6.*
Availability	What availability requirement do you have for your website?	NA	
Availability	What is the capacity of your host to guarantee the level of availability you require?	NA	
Accessibility	Is the load time for the website' s home page excessive?	Yes	17 seconds

Style

A majority of FHDC users found the website to be ' fairly attractive' , and two-thirds stated that they did not find the graphics distracting at all. Only one in seven users, however, said that the site looked ' very attractive' . Browsing the site one can see that whilst layout and formatting are largely consistent, the website' s look does differ in older areas of the site, such as the Training Manuals and Design Participation sections. The layout also differs within the Links section, where a Frame is used to structure the large amount of data present.

Table 14

RESPONSES FOR THE COMPONENT STYLE FOR THE FHDC WEBSITE				
QUALITY	QUESTION	RESPONSE		COMMENT
Appearance	Is the formatting of textual content consistent?	No		Style differs in older sections
Appearance	Is the website' s look consistent?	No		Style differs in older sections, and for Links section
Appearance	How do you think the website looks?	Southern Respondents	Northern Respondents	
``	Unattractive	1	2	
``	Fairly attractive	21	22	
``	Very attractive	3	4	
Appearance	What do you think about the graphics?	Southern Respondents	Northern Respondents	
``	They are distracting	1	0	
``	They are a little distracting	5	8	
``	They are not distracting at all	19	20	

Content

The evidence clearly suggests that the content of FHDC is a highly valued resource for its viewers, although more could be done if the website is to support interactive processes such as networking and debate. The majority of respondents stated that the site's content had helped improve their understanding of urban issue ' a lot' , whilst the same proportion answered similarly to the question, ' How useful do you find the content of thiswebsite for your work?' There was slightly less enthusiasm for the standard of writing on the website, with the majority of respondents claiming that this was 'adequate' rather than 'excellent', but the majority of respondents to the user survey did find FHDC's links to be useful.

Where enabled by FHDC, users seem to make good use of the website's content by either passing information on to a colleague, or by contacting a contributor. However, these activities will be constrained without more referencing of substantial textual content, and whilst few author contact details are provided. With the exception of the Design Participation Forum, there is no facility for users to submit content other than a hyperlink.

Table 15

RESPONSES FOR THE COMPONENT CONTENT FOR THE FHDC WEBSITE			
QUALITY	QUESTION	RESPONSE	COMMENT
Interactivity	Can users submit	No	Research

	content to the website?			disseminated FHDC sponsored. Links are submitted
Readability	Does the textual content contain spelling mistakes?	No		
Timeliness	Is the date of last update provided?	No		
Interactivity	Can users subscribe to a newsletter?	Yes		
Authority	Is textual content referenced where appropriate?	No		
Interactivity	Are the contact details of authors provided?	No		No
Interactivity	Is there facility for users to comment on the site' s textual content?	Yes		In Design Participation section only
Interactivity	Does the website feature a user survey?	No		
Navigability	Are the site' s hyperlinks functioning?	NA		Test unworkable as ' child' sections within the links section do not have a unique URL
Editing	By what process is content selected?	NA		Question and response discursive
Editing	By what process is content edited?	NA		Question and response discursive
Relevancy	How useful do you find the site' s links?	Southern Respondents	Northern Respondents	
''	Very useful	12	11	
''	Fairly useful	13	15	
''	Not very useful	0	2	
Interactivity	Have you ever contributed to the content of this website?	Southern Respondents	Northern Respondents	
''	Yes	0	4	
''	No	25	24	
''	If ' yes' , what form did this contribution take?	NA	NA	
Relevancy	Has this website helped improve your understanding of urban issues?	Southern Respondents	Northern Respondents	
''	A lot	12	11	

	A little	12	15	
	Very little	1	2	
Relevancy	How useful do you find the content of this website for your work?	Southern Respondent	Northern Respondent	
	Very useful	14	7	
	Fairly useful	11	20	
	Not very useful	0	1	
Interactivity	Have you ever passed information from this website on to a colleague?	Southern Respondents	Northern Respondents	
	Yes	14	15	
	No	11	13	
Interactivity	Have you ever contacted a contributor to this website?	Southern Respondents	Northern Respondents	
	Yes	7	4	
	No	18	24	
Quality	How do you rate the standard of writing on this website?	Southern Respondents	Northern Respondents	
	Excellent	2	6	
	Adequate	23	22	
	Poor	0	0	

Strategy

The target audience for the FHDC website is defined as "researchers and professionals working for the improvement of the built environment in developing countries", we can see from the profiles of respondents to the user survey that FHDC has been successful in capturing its intended audience. Respondents to the survey were researchers, project leaders, students and architects from mainly academic, independent and governmental institutions. There was also a near 50% split between respondents from the South and those from the North.

Searching under the acronym ' FHDC' returns the website in first position using Google, and the site is also listed ' number one' when searching under the phrases ' Built Environment in Developing Countries' and ' Architecture and Planning in Developing Countries' . However, the website' s prominence on major search engines may not be the only reason for the fact that it receives around 1,000 visits each month. Two-thirds of all user survey respondents found out about FHDC after following a hyperlink from within another website. FHDC is clearly a well-promoted website that is recognised as a valued resource by other websites in the field of urban development. The respondents themselves clearly

value the site since they visit at least once each month for networking or research purposes.

Table 16

RESPONSES FOR THE COMPONENT STRATEGY FOR THE FHDC WEBSITE				
QUALITY	QUESTION	RESPONSE		COMMENT
Clarity	Does the site contain a definition of its target audience?	Yes		
Clarity	Does the site contain a statement of purpose?	Yes		
Marketing	Can the website be found within the top 10 listings of Google by searching under the website' s name or type of business?	Yes		Search terms taken from keyword meta-tags
Marketing	In what type of country are you based?	--		
''	Northern	28		
''	Southern	25		
Marketing	What type of organisation are you from?	--		
''	NGO	2		
''	Academic	20		
''	Independent	15		
''	Governmental	6		
''	Commercial	7		
''	Multi-lateral	3		
''	Other	0		
Marketing	How did you find out about this website?	Southern Respondents	Northern Respondents	
''	Another website	17	21	
''	Via an electronic newsletter or e-mail	4	3	
''	On off-line publication	0	1	
''	Word-of-mouth	4	3	
Marketing	How regularly do you visit this website?	Southern Respondents	Northern Respondents	
''	Weekly	4	8	
''	Monthly	11	9	
''	Less than once each month	10	11	
Marketing	What do you use this website for?	Southern Respondents	Northern Respondents	
''	Networking	7	5	
''	Research dissemination	4	5	

	Research	20	20	
	Keeping informed	17	14	
Marketing	What is your role or job title within your organisation?	Researcher/ Project Leader/ Student/ Architect/ Administrator		Frequency 12, 19, 10, 8, 4 respectively
Marketing	How many page requests have you had over the period 1 December 2000 to 31 May 2001?	NA		
Marketing	Have many documents have been downloaded over the period 1 December 2000 to 31 May 2001?	NA		--
Marketing	How do you promote your website?	--		
	Search engines	Yes		
	Directories	Yes		
	Links	Yes		
	Signatured correspondence	Yes		
	E-newsletters	No		
	Off-line leaflets	No		
	Off-line presence at events	Yes		
Marketing	How many unique visitors have you had over the period 1 December 2000 to 31 May 2001?	6,000		
Marketing	How many subscribers do you have?	NA		
Marketing	What two areas of your website, in addition to the home page, received most traffic over the period 1 December 2000 to 31 May 2001?	Links and Projects sections		

Management

FHDC receives no regular funding for its activities and the total staff input time of 9 to 16 hours per week is voluntary. Given these limitations, the website has been highly successful attracting a large number of visitors, who clearly value the webmaster's work.

Table 17

RESPONSES FOR THE COMPONENT MANAGEMENT FOR THE FHDC WEBSITE			
QUALITY	QUESTION	RESPONSE	COMMENT
Interactivity	Are person and organisation contact	Yes	

	details provided for the website?		
Financial Resources	What is the total annual budget for the website, in US \$?	0	Occasional funding received
Human Resources	How many total staff hours are devoted to your website each week?	--	
``	Under 8	--	
``	9 to 16	Yes	
``	17 to 40	--	
``	41 to 80	--	
``	Over 81 hours	--	

Conclusions

FHDC is a frequently visited website serving a large international community of users. A number of technical concerns should, therefore, be addressed if the site is to improve this service to its international audience. The financial and human resource constraints currently faced by FHDC continues to be a constraint on these improvements.

Recommendations

- Tidy-up the HTML
- Reduce the number, scale-down or compress image files
- Consider improving the consistency of the website's architecture and style
- Ensure that documents can be downloaded as either HTML, plain text or an earlier version of word
- Where possible include full contact details of contributors
- Insert a date of last update stamp

NAERUS: Network Association of European Researchers on Urbanisation in the South, Brussels, Belgium

<<http://www.naerus.org>>

Architecture

When asked how easy they found NAERUS to browse all but one respondent stated that this was either 'fairly easy' or 'very easy'. However, since visitors in one section of the site cannot move to another without passing through the home page, it is possible that this positive perception has something to do with the relatively small amount of content on the site. Visitors benefit from a table of contents and a hyperlinked logo used on each page to navigate them home, but with no relational navigational cue - to indicate where within the overall architecture of the site users are - NAERUS may become increasingly difficult to navigate should more content be added. In the non-Frames version of the

website the architectural foundations for such a development are already in place, since the site' s directory structure uniquely identifies each page.

Table 18

RESPONSES FOR THE COMPONENT ARCHITECTURE FOR THE NAERUS WEBSITE				
QUALITY	QUESTION	RESPONSE		COMMENT
Navigability	Does the website feature a table of contents, site map, or equivalent?	Yes		Detailed index
Navigability	Can visitors reach the home page from any page?	Yes		Using logo
Navigability	Can visitors in one section move to another without returning to the home page?	No		Site menu not repeated
Navigability	Do the website' s directory structure and syntax facilitate navigation?	Yes		URL for each section uniquely identified in non-Frames version
Navigability	Is there a search feature?	No		
Navigability	Does the site feature a relational navigational cue?	No		
Navigability	How easy do you find this website to browse?	Southern Respondents	Northern Respondents	
	Very easy	1	7	
	Fairly easy	4	9	
	Not easy	0	1	
Navigability	Can users easily find a specified piece of information on this website?	Number of clicks taken per user		Site down at time tests conducted

Technology

Although NAERUS' s site definition document fails to validate as either HTML version 3.2 or version 4.0, according to W3C standards, an analysis of the home page showed that this had not caused any detectable browser support conflicts. Although an all-text alternative to the site is not offered, an alternative to the default version with Frames is provided. In addition, as an alternative to PDF, documents can be downloaded in WinWord and RTF, to increase accessibility for those users whose systems do not support PDF.

One potential inconvenience to users identified is the lengthy download time for the home page, which even for the no Frames version of the site was 14 seconds, using a 28,800 baud modem. Whilst not necessarily spoiling the

appearance of the site, this can be attributed to the large number of image files (in GIF format) on the page.

Table 19

RESPONSES FOR THE COMPONENT TECHNOLOGY FOR THE NAERUS WEBSITE				
QUALITY	QUESTION	RESPONSE		COMMENT
Accessibility	Is the site navigable when images are disabled in the browser?	No		No all text alternative
Accessibility	In what format(s) can available documents be downloaded?	PDF/ WinWord/ RTF		
Marketing	Does the website' s definition document contain meta-tags for search engines?	No		
Accessibility	Does the code contained within the site' s definition document meet W3C standards?	No		Test against HTML versions 3.2 and 4.0
Accessibility	Is the site' s home page compatible with popular browsers?	Yes		
Availability	What availability requirement do you have for your website?	NA		
Availability	What is the capacity of your host to guarantee the level of availability you require?	NA		
Accessibility	Is the load time for the website' s home page excessive?	Yes		14 seconds

Style

The majority of respondents to the user survey stated that NAERUS was a ' fairly attractive' website. However, browsing the site reveals some lack of consistency in the formatting of text on older pages and in the site' s overall look (this can be seen by browsing through the workshop sub-sections under the activity section, for example.) Only three respondents stated that the site was ' very attractive' , whilst 45% said that the graphics offered some form of distraction.

Table 20

RESPONSES FOR THE COMPONENT STYLE FOR THE NAERUS WEBSITE				
QUALITY	QUESTION	RESPONSE		COMMENT
Appearance	Is the formatting of textual content consistent?	No		Style different for older pages
Appearance	Is the website' s look consistent?	No		Style different for older pages
Appearance	How do you think the website looks?	Southern Respondents	Northern Respondents	

	Unattractive	0	0	
	Fairly attractive	5	14	
	Very attractive	0	3	
Appearance	What do you think about the graphics?	Southern Respondents	Northern Respondents	
	They are distracting	1	2	
	They are a little distracting	1	6	
	They are not distracting at all	3	9	

Content

Evidence suggests that in addition to the high quality of NAERUS' s content, its readership has made use of the site' s interactivity to participate in a small ' NAERUS community' . The majority of respondents to the user survey said that the standard of writing on the website was either ' excellent' or ' adequate' for its purpose. Furthermore, half of all respondents stated that the site had improved their understanding of urban issues ' a lot' , whilst a similar set of responses was returned for the questions: ' How useful do you find the website' s content for your work' , and ' How useful do you find the site' s links?'

All content on the NAERUS site is well referenced and includes the author' s contact details, an opportunity for networking that half of all respondents to the user survey had taken advantage of. Two thirds of all respondents had also passed information from NAERUS on to their colleagues, and all users are allowed to subscribe to a newsletter.

Fewer respondents had submitted content to the site, but research dissemination is only an option for NAERUS members concerned with the association' s conference. As with several of the website' s evaluated for this project, much of NAERUS' s textual content is produced, selected and edited as part of the off-line activities carried out during the proceedings of a conference. Given the quality of NAERUS' s content and the facilities already present on the site, an attempt to increase the readership and open the ' NAERUS community' to members beyond those immediately concerned with the conference may be an option to consider. Such users could also be given an opportunity to comment on NAERUS' s content publicly, without having to be physically involved with the association' s conference.

Table 21

RESPONSES FOR THE COMPONENT CONTENT FOR THE NAERUS WEBSITE			
QUALITY	QUESTION	RESPONSE	COMMENT
Interactivity	Can users submit content to the website?	Yes	Exclusive to network members

Readability	Does the textual content contain spelling mistakes?	No		
Timeliness	Is the date of last update provided?	No		Posted content is dated
Interactivity	Can users subscribe to a newsletter?	Yes		
Authority	Is textual content referenced, where appropriate?	Yes		
Interactivity	Are the contact details of authors provided?	Yes		
Interactivity	Is there facility for users to comment on the site' s textual content?	No		No FHDC type facility to comment on particular research
Interactivity	Does the website feature a user survey?	No		
Navigability	Are the site' s hyperlinks functioning?	NA		No links page
Editing	By what process is content selected?	NA		Question and response discursive
Editing	By what process is content edited?	NA		Question and response discursive
Relevancy	How useful do you find the site' s links?	Southern Respondents	Northern Respondents	
``	Very useful	1	6	
``	Fairly useful	3	7	
``	Not very useful	1	4	
Interactivity	Have you ever contributed to the content of this website?	Southern Respondents	Northern Respondents	
``	Yes	1	3	
``	No	4	14	
``	If ' yes' what form did this contribution take?	Papers submitted		
Relevancy	Has this website helped improve your understanding of urban issues?	Southern Respondents	Northern Respondents	
``	A lot	2	9	
``	A little	3	7	
``	Very little	0	1	
Relevancy	How useful do you find the content of this website for your work?	Southern Respondents	Northern Respondents	

	Very useful	1	10	
	Fairly useful	4	7	
	Not very useful	0	0	
Interactivity	Have you ever passed information from this website on to a colleague?	Southern Respondents	Northern Respondents	
	Yes	1	13	
	No	4	4	
Interactivity	Have you ever contacted a contributor to this website?	Southern Respondents	Northern Respondents	
	Yes	2	10	
	No	3	7	
Quality	How do you rate the standard of writing on this website?	Southern Respondents	Northern Respondents	
	Excellent	1	6	
	Adequate	4	10	
	Poor	0	1	

Strategy

The target audience for NAERUS is defined broadly as "a pluridisciplinary network of researchers and experts working on urban issues in developing countries", and this is broadly reflected in the user survey. Just under a quarter of all responses were from a Southern readership, whilst half of all respondents were researchers, project leaders and consultants, working either within academic institutions or independently.

In view of this potentially broad audience and the quality of NAERUS' s content, it is surprising that the number of recorded visits over a six-month period is a modest 786, especially given that the site is advertised through open means, such as search engines, directories and cross-linking. This may be an inevitable consequence of the website' s specialist content, but there are good reasons to suppose that the readership could be increased, should the website opt to broaden its appeal beyond the confines of the NAERUS conference. Current NAERUS users tend to be regular visitors, benefiting from the opportunity to network, conduct research and keep informed on urban issues, and it is likely that this information could be of benefit to others.

Table 22

RESPONSES FOR THE COMPONENT STRATEGY FOR THE NAERUS WEBSITE			
QUALITY	QUESTION	RESPONSE	COMMENT

Clarity	Does the site contain a definition of its target audience?	Yes		
Clarity	Does the site contain a statement of purpose?	Yes		
Marketing	Can the website be found within the top 10 listings of Google by searching under the website' s name or type of business?	Yes		Search terms taken from phrases within the website
Marketing	In what type of country are you based?	--		
``	Northern	17		
``	Southern	5		
Marketing	What type of organisation are you from?	--		
``	NGO	1		
``	Academic	11		
``	Independent	5		
``	Governmental	2		
``	Commercial	1		
``	Multi-lateral	2		
``	Other	0		
Marketing	How did you find out about this website?	Southern Respondents	Northern Respondents	
``	Another website	2	3	
``	Via an electronic newsletter or e-mail	2	4	
``	On off-line publication	0	3	
``	Word-of-mouth	1	7	
Marketing	How regularly do you visit this website?	Southern Respondents	Northern Respondents	
``	Weekly	1	1	
``	Monthly	2	9	
``	Less than once each month	2	7	
Marketing	What do you use this website for?	Southern Respondents	Northern Respondents	
``	Networking	3	5	
``	Research dissemination	1	2	
``	Research	0	11	
``	Keeping informed	5	12	
Marketing	What is your role or job title within your organisation?	Researcher/ Project Leader/ Consultant/ Administrator/ Lecturer/ Planner		Frequency 9, 4, 4, 1, 2, 2 respectively
Marketing	How many page requests have you had over the	941		

	period 1 December 2000 to 31 May 2001?		
Marketing	Have many documents have been downloaded over the period 1 December 2000 to 31 May 2001?	NA	--
Marketing	How do you promote your website?	--	
``	Search engines	Yes	
``	Directories	Yes	
``	Links	Yes	
``	Signature correspondence	No	
``	e-newsletters	No	
``	Off-line leaflets	Yes	
``	Off-line presence at events	Yes	
Marketing	How many unique visitors have you had over the period 1 December 2000 to 31 May 2001?	786	
Marketing	How many subscribers do you have?	NA	
Marketing	What two areas of your website, in addition to the home page, received most traffic over the period 1 December 2000 to 31 May 2001?	NA	

Management

Given its resources, the NAERUS site is undoubtedly value for money. NAERUS has an 'occasional' budget of US\$1,400, but this is not regularly received. Moreover a total staff input time of less than eight hours per week is a clear limiting factor in terms of any decision to increase the site' s strategic scope.

Table 23

RESPONSES FOR THE COMPONENT MANAGEMENT FOR THE NAERUS WEBSITE			
QUALITY	QUESTION	RESPONSE	COMMENT
Interactivity	Are person and organisation contact details provided for the website?	Yes	
Financial Resources	What is the total annual budget for the website, in US \$?	No regular income	Occasional ad-hoc funds received
Human Resources	How many total staff hours are devoted to your website each week?	--	
``	Under 8	Yes	

``	9 to 16	--	
``	17 to 40	--	
``	41 to 80	--	
``	Over 81 hours	--	

Conclusions

Analysis of the NAERUS website shows that with good content and an active membership base the number of visitors to the site could be significantly increased. A small number of minor architectural and technical issues could also be altered to improve the site for an international audience.

Recommendations

- Include a navigable site index within sections
- Reduce the number, scale down or compress image files
- Insert a date of last update stamp

RUDI: Resource for Urban Design Information, Oxford, UK

<<http://www2.rudi.net/rudi.html>>

Architecture

The evidence strongly suggests that within the RUDI domain all content is well structured and easily navigable. When asked how easy they found RUDI to browse, the majority of respondents stated that was either 'fairly easy' or 'very easy'. The site contains a search feature and a site index, and users can click on the site logo to navigate 'home' from any page. Moreover, when asked to locate a specified piece of information on the site during the usability test, all five users took the minimum number of clicks necessary.

Almost all of the usability problems concerning system architecture that appeared during the evaluation of RUDI occurred outside of the RUDI domain, and are not technically a characteristic of the RUDI website. The navigational problem described here is mentioned only because the webpages referred to are referenced as content within the RUDI website and sport the RUDI logo, and are likely, therefore, to be associated with RUDI by the visitor. Navigating RUDI to browse associated content outside of the RUDI domain, visitors are unable to browse to another section within RUDI by using the drop-down menu that normally appears on each 'RUDI/webpage. Consequently, without a navigational sign, viewers have little clue where within the current section they are, in relation to the rest of the website. This problem is, in part, a consequence of RUDI's role as a portal for Urban Design information. But the practice of encouraging users to browse between different websites (with an entirely different look and feel) as

part of the same session may explain why two respondents found RUDI difficult to browse.

A secondary usability problem is that the unique URLs attributed to each section of the website are not consistently the same as the title for that section. The URL for the section ' Talk' , for example, is/feedback.html>. This inconsistency may increase the chances of error if users attempt to use the directory structure to navigate the site or post a hyperlink to that section.

Table 24

RESPONSES FOR THE COMPONENT ARCHITECTURE FOR THE RUDI WEBSITE				
QUALITY	QUESTION	RESPONSE		COMMENT
Navigability	Does the website feature a table of contents, site map, or equivalent?	Yes		Section menu
Navigability	Can visitors reach the home page from any page?	Yes		Using drop-down section menu and logo
Navigability	Can visitors in one section move to another without returning to the home page?	Yes		Using drop-down section menu
Navigability	Does the website' s directory structure and syntax facilitate navigation?	Yes		URL for each section uniquely identified
Navigability	Is there a search feature?	Yes		
Navigability	Does the site feature a relational navigational cue?	Yes		Section titles marked when selected
Navigability	How easy do you find this website to browse?	Southern Respondents	Northern Respondents	
``	Very easy	0	3	
``	Fairly easy	1	5	
``	Not easy	0	2	
Navigability	Can users easily find a specified piece of information on this website? Indicate the number of clicks taken to identify what Gloucester Green is an Oxford Case Study example of.	Number of clicks taken per user 3 - 3 - 3 - 3 - 3		Minimum number of clicks, 3.

Technology

Several technical concerns are likely to impede site access for an international audience attempting to view the RUDI website. RUDI' s site definition document fails to validate as either HTML version 3.2 or version 4.0, according to W3C standards. This can cause both rendering and navigation problems in certain browsers. An analysis of the home page revealed 14 browser support conflicts that impede access to users with older browsers such as Netscape Navigator 3.0. Moreover, a marginally excessive download time for RUDI' s home page of 14 seconds, using a 28,800 baud modem, may put off certain users.

Table 25

RESPONSES FOR THE COMPONENT TECHNOLOGY FOR THE RUDI WEBSITE			
QUALITY	QUESTION	RESPONSE	COMMENT
Accessibility	Is the site navigable when images are disabled in the browser?	Yes	No all text alternative
Accessibility	In what format(s) can available documents be downloaded?	NA	
Marketing	Does the website' s definition document contain meta-tags for search engines?	No	
Accessibility	Does the code contained within the site' s definition document meet W3C standards?	No	Test against HTML versions 3.2 and 4.0
Accessibility	Is the site' s home page compatible with popular browsers?	14 browser support conflicts	Problems in N.S. 3.*
Availability	What availability requirement do you have for your website?	NA	
Availability	What is the capacity of your host to guarantee the level of availability you require?	NA	
Accessibility	Is the load time for the website' s home page excessive?	Yes	14 seconds

Style

Browsing shows that within the RUDI domain the site' s look and formatting are consistent. Close to half of all respondents to the user survey, however, stated that RUDI was an ' unattractive website. Given that users did not attribute this to distracting graphics, it may be that users are indeed put off by the experience of browsing between websites with different looks as part of the same visitor session. Given the low number of total responses, this finding may also, of course, be an anomaly.

Table 26

RESPONSES FOR THE COMPONENT STYLE FOR THE RUDI WEBSITE			
QUALITY	QUESTION	RESPONSE	COMMENT

Appearance	Is the formatting of textual content consistent?	Yes		With RUDI domain
Appearance	Is the website' s look consistent?	Yes		With RUDI domain
Appearance	How do you think the website looks?	Southern Respondents	Northern Respondents	
``	Unattractive	0	5	
``	Fairly attractive	0	5	
``	Very attractive	1	0	
Appearance	What do you think about the graphics?	Southern Respondents	Northern Respondents	
``	They are distracting	0	0	
``	They are a little distracting	1	1	
``	They are not distracting at all	0	9	

Content

RUDI' s textual content goes through a minimal selection and editing process, but the outputs were considered to be of a high standard by respondents of the user survey. The majority of users said that the site had helped improve their understanding of urban issues and had been useful for their work, whilst the standard of writing was generally thought to be ' adequate' for its purpose.

There is also evidence that RUDI has been partially successful in developing a community of RUDI users. Over half of all respondents to the user survey had passed information on to a colleague, despite the inconsistent provision of author contact details, one third of all respondents had contacted a contributor to the website. There is, however, no online facility for the submission of content; a facility that could be the starting point of a system to solve the possible usability problem relating to the site' s architecture, referred to above.

One minor failing is that although RUDI' s links were generally thought to be ' very useful' , 14 dead-links out of a total of 213 were identified at <http://www2.rudi.net/ppo/a-zlist.htm>.

Table 27

RESPONSES FOR THE COMPONENT CONTENT FOR THE RUDI WEBSITE			
QUALITY	QUESTION	RESPONSE	COMMENT
Interactivity	Can users submit content to the website?	Yes	E-mail editor
Readability	Does the textual content contain spelling mistakes?	No	

Timeliness	Is the date of last update provided?	Yes		
Interactivity	Can users subscribe to a newsletter?	No		Links exist to other newsletters
Authority	Is textual content referenced where appropriate?	Yes		
Interactivity	Are the contact details of authors provided?	No		Not consistently
Interactivity	Is there facility for users to comment on the site's textual content?	Yes		A FHDC facility exists, but is not integrated into each article
Interactivity	Does the website feature a user survey?	No		
Navigability	Are the site's hyperlinks functioning?	14 of 213 failed		URL tested: http://www2.rudi.net/ppp/a-zlist.htm
Editing	By what process is content selected?	NA		Question and response discursive
Editing	By what process is content edited?	NA		Question and response discursive
Relevancy	How useful do you find the site's links?	Southern Respondents	Northern Respondents	
''	Very useful	1	4	
''	Fairly useful	0	4	
''	Not very useful	0	2	
Interactivity	Have you ever contributed to the content of this website?	Southern Respondents	Northern Respondents	
''	Yes	0	1	
''	No	1	9	
''	If ' yes' , what form did this contribution take?	Paper submitted		
Relevancy	Has this website helped improve your understanding of urban issues?	Southern Respondents	Northern Respondents	
''	A lot	1	2	
''	A little	0	6	
''	Very little	0	2	
Relevancy	How useful do you find the content of this website for your work?	Southern Respondents	Northern Respondents	
''	Very useful	0	3	

	Fairly useful	1	5	
	Not very useful	0	2	
Interactivity	Have you ever passed information from this website on to a colleague?	Southern Respondents	Northern Respondents	
	Yes	1	6	
	No	0	4	
Interactivity	Have you ever contacted a contributor to this website?	Southern Respondents	Northern Respondents	
	Yes	0	4	
	No	1	6	
Quality	How do you rate the standard of writing on this website?	Southern Respondents	Northern Respondents	
	Excellent	0	2	
	Adequate	1	7	
	Poor	0	1	

Strategy

The target audience for the site is defined broadly as being teachers, researchers and professionals in the field of urban design and its related disciplines. According to the small number of user survey responses, users appear to be project leaders, planners, students and researchers, visiting RUDI on a regular basis to conduct research and keep informed on urban design issues. From the user survey we can also surmise that the majority of users are commercial or academic clients from more developed countries. The actual number of visitors to the site is unknown. Log-file data to estimate the number of visitors was unavailable, and the number of page requests, at 434,025 over a six-month period, tells us little.

Given the range of marketing strategies employed by RUDI, it is surprising that the majority of reported users discovered RUDI through word of mouth. This may be testimony to RUDI's popularity, but could reflect the effectiveness of other marketing strategies. Such evidence may also help explain why so few visitors from Southern countries were reported. RUDI is, however, readily locatable. Searching using Google with the term ' RUDI' returns the website in number one position, as does the term ' Urban Design.'

Table 28

RESPONSES FOR THE COMPONENT STRATEGY

FOR THE RUDI WEBSITE				
QUALITY	QUESTION	RESPONSE		COMMENT
Clarity	Does the site contain a definition of its target audience?	Yes		
Clarity	Does the site contain a statement of purpose?	Yes		
Marketing	Can the website be found within the top 10 listings of Google by searching under the website' s name or type of business?	Yes		Search terms taken from phrases within the website
Marketing	In what type of country are you based?	--		
``	Northern	10		
``	Southern	1		
Marketing	What type of organisation are you from?	--		
``	NGO	0		
``	Academic	5		
``	Independent	0		
``	Governmental	1		
``	Commercial	4		
``	Multi-lateral	0		
``	Other	1		
Marketing	How did you find out about this website?	Southern Respondents	Northern Respondents	
``	Another website	0	3	
``	Via an electronic newsletter or e-mail	0	0	
``	On off-line publication	0	0	
``	Word-of-mouth	1	7	
Marketing	How regularly do you visit this website?	Southern Respondents	Northern Respondents	
``	Weekly	0	6	
``	Monthly	1	1	
``	Less than once each month	0	3	
Marketing	What do you use this website for?	Southern Respondents	Northern Respondents	
``	Networking	0	1	
``	Research dissemination	0	1	
``	Research	1	7	
``	Keeping informed	0	7	

Marketing	What is your role or job title within your organisation?	Researcher/ Project Leader/ Planner/ Student/ Consultant	Frequency 1, 2, 3, 4, 1 respectively
Marketing	How many page requests have you had over the period 1 December 2000 to 31 May 2001?	434,025	
Marketing	Have many documents have been downloaded over the period 1 December 2000 to 31 May 2001?	NA	--
Marketing	How do you promote your website?	--	
``	Search engines	Yes	
``	Directories	Yes	
``	Links	Yes	
``	signed correspondence	Yes	
``	e-newsletters	Yes	
``	Off-line leaflets	Yes	
``	Off-line presence at events	Yes	
Marketing	How many unique visitors have you had over the period 1 December 2000 to 31 May 2001?	NA	Not indicated in log-file data
Marketing	How many subscribers do you have?	NA	
Marketing	What two areas of your website, in addition to the home page, received most traffic over the period 1 December 2000 to 31 May 2001?	NA	

Management

RUDI is a large website with a total staff input time of over 81 hrs per week. This should justify funding to increase its dedicated budget to more than US\$ 250 per annum, and warrants consideration of the opportunity to provide content management support to authors currently using *ad hoc* website production tools to disseminate their work via RUDI.

Table 29

RESPONSES FOR THE COMPONENT MANAGEMENT FOR THE RUDI WEBSITE			
QUALITY	QUESTION	RESPONSE	COMMENT
Interactivity	Are person and organisation contact details provided for the website?	Yes	

Financial Resources	What is the total annual budget for the website, in US \$?	217	
Human Resources	How many total staff hours are devoted to your website each week?	--	
``	Under 8	--	
``	9 to 16	--	
``	17 to 40	--	
``	41 to 80	--	
``	Over 81 hours	Yes	

Conclusions

RUDI is a large frequently used website which has adopted a clear strategy for its online activities. Given its profile, content management support to authors - who use RUDI to disseminate their research – could improve the users overall experience and enhance RUDI as an Internet resource for the Urban Design community. The site exhibits a small number of minor usability problems.

Recommendations

- Ensure that the syntax of section URLs is consistent with the section titles on the webpage
- Tidy up the HTML
- Ensure that author contact details are consistently provided
- Remove or update dead-links
- Reduce the number, scale down or compress image files
- Utilise log-file data that provides estimates of visitor numbers

PART III

WEBSITE DESIGN GUIDELINES

The following summary forms a set of **guidelines for the design of websites** disseminating development research to an international audience. The best-practices presented are distilled from features observed during the evaluation of eight websites (note 32). The summary represents a set of suggested characteristics appropriate to a basic website disseminating development research. The guidelines are structured according to the components of website production previously outlined, with the exception of the component Management, which is not a visible output of website design.

Architecture

- Ensure that the website contains a detailed navigable menu, site index or site map. In a well-structured website this would be repeated on each page so that visitors are able to navigate between sections from any section of the site. A site index should be organised alphabetically. A site map is organized according to the structure of the site and reflects the most important sections and sub-sections.
- Ensure that visitors can reach the home page from any page on the site. A suggested device for this would be to include a hyperlink in the website logo, which should be repeated on each page according to the same layout.
- Orientate users by using a visual cue within the site menu, indicating which section they are in, in relation to the rest of the website. This might take the form of an arrow pointing to the page one is on within a list of pages.
- Make sure each file's title is unique and meaningful (context independent). The title should be a maximum of 50-100 characters in length and be written with the first letter of each word in upper case.
- Each individual webpage should have a unique and meaningful URL, which unambiguously reflects the contents of that page. Avoid long and complex URLs that can be degraded if sent in an e-mail. . All HTML files should end in the same suffix, <.htm> or <.html>.

Technology

- Ensure that the website can be browsed when images are disabled in the browser by using hypertext alternatives to navigable images.
- Ensure that any downloadable documents can be accessed in common standard file formats, such as HTML, RTF or Word 6.0.
- Ensure that the HTML meets specified W3C standards. Validating as either HTML version 3.2 or version 4.0 should ensure that your website can be fully rendered in most browsers.

- Avoid using Frames, JavaScript and other forms of code not compatible with basic browsers. You may want to check which technologies work in which browsers by using a browser compatibility table. Advanced features can reduce download speeds, whilst Frames can hinder navigation or prevent book-marking.
- Avoid excessive use of large and numerous images that may reduce download times. Image files can be reduced through file compression (note 33), but aim to keep each file size under 55k.

Style

- Ensure that the website's layout and formatting – in terms of the dimensions, positioning and colouration of all icons, links, text and background colours - are consistent between pages. A well designed website will use a template device, such as Cascading Style Sheets (CSS) to format all text, headers and graphics. CSS will save you time in maintaining your website, since only one file needs to be changed in order to update the look of the entire site.
- A website's colour scheme should reflect the purpose of the site or adopt the organisation's colours. Each colour used should represent only one category of information. Designers should keep in mind that bright background colours are distracting for readers since the text is not always easily distinguishable. The use of images as background is not recommended since this makes the page slower to download.

Content

- Ensure that all posted articles feature the author's contact details. For ease of use this would preferably take the form of a 'mailto' and would include the author's name and organisation.
- Ensure that the webmaster's contact details are available. This is best achieved using a 'mailto' device and should include a person name and organisation. Website contact details should be repeated on each page according to the same layout.
- Insert a data of last-production stamp. This should be repeated on each page according to the same page layout.
- Ensure that each page is appropriately titled with a meaningful context independent reference. This will help visitors arriving deep within the website (from an external link) to orientate themselves within the site's overall architecture. In a well-organised site each page title will correspond exactly with the file name for that webpage, as shown in the browser's address field.
- Ensure that the semantics of all hypertext is appropriate and meaningful. The text used should be context-independent and clearly describe to visitors what they are being linked to. Given that some users will possess text-only browsers, it is important to repeat this exercise by providing links-as-text as an alternative to navigable images.

- All downloads should show the size of the file so that users can anticipate download times.
- Ensure that all text is appropriately referenced, with no evidence of spelling or grammatical errors.

Strategy

- Maximise exposure to potential users through search engines by inserting keywords into your website's definition document. Each file should have up to ten keywords or keyword phrases to identify the content. Each keyword or keyword phrase should be separated by a comma followed by a space. Each file should also have a description of up to 250 characters. This description is the text that appears with the title in the results of a search in some search engines. Meta-information should minimally include unique titles for each page.

FURTHER PROJECT ACTIVITIES

The primary aim of this project has been to outline a suggested methodology for the evaluation of websites disseminating development research findings. The report has attempted to achieve this aim by documenting the assessment of four websites disseminating urban development research findings. The rationale for undertaking these evaluations was essentially inherent to an understanding of how evaluations can be undertaken generally, but it is hoped that the individual reports for each website will go some way towards supporting the services they offer.

The main output of this research has been the project website, <<http://www.urbandevelopmentFHDC.org/WebsiteEvaluation>>. This module contains detailed guidelines for the evaluation of websites and equips users with the tools necessary for assessing their own websites. The best-practices in website design for research dissemination to an international audience has been contributed to an Open Source Software website production system <<http://www.appropriatesoftwarefoundation.org/AppropriateWebsiteFactory>>.

NOTES AND READING

1. Adapted from the *Sustainable Development Gateway Webworks* website architecture, proposed at <<http://sdgateway.net/webworks/architecture/default.htm>>.
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3. Tan, M. (1999) 'Electronic Information: Promise and Peril.' *Development in Practice*, 1999, Vol.9, No.5, Oxford: Oxfam.
4. See, for example, LaBond, C. (2000) *Is Internet Access Helping or Hindering Civil Society Organisations?* Available at <http://www.idrc.ca/reports/read_article_english.cfm?article_num=623>.
5. See, for example, Nelson, T. (2000) *Only Connect? NGOs need more than Technology Access to Build Civil Society.* <<http://www.isar.org/isar/archive/GT/GT6nelson.html>>.
6. See Hamelink, C. (1998) 'The People's Communication Charter.' In *Development in Practice*, 1998, Vol.8, No.1. Oxford: Oxfam.

Or

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7. McConnell, S (2000) *A Champion in our Midst: Lessons Learned from the Impacts of NGOs Use of the Internet*. Ontario: Telecommons Development Group. This article can be found at <<http://www.telecommons.com/reports.cfm>>.
8. Camacho, K. (2001) *Evaluating the Impact of the Internet in Civil Society Organisations of Central America: a Summary of the Research Framework*. Ottawa: IDRC <<http://www.acceso.or.cr/publica/telecom/frmwkENG.shtml>>.
9. This assumption is based upon the author's comprehensive attempts to find examples of website evaluation methodologies for CSOs. Only three methodology papers were located following a campaign of announcements on ICT and Development list-serves, extensive Internet searches and personal communications.
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13. Sandoval, V. (2000) *Sandoval's Evaluation Website Methodology*. Paris: Ecole Centrale. Unpublished Paper.
14. Chivhanga, B. (2001) *Carrying Out Impact Assessments of Websites: Concepts and Techniques*. London: ISRG. <http://www soi.city.ac.uk/research/isrg/isrgmembers.htm>.
15. The Evaluation Framework is a unique document, but inspiration was taken from a variety of sources, including Saywell, D (2000) *Dissemination Pathways and Indicators of Impact on Development: a Review of the Literature*. Loughborough: Loughborough University. <http://www.lboro.ac.uk/wedc/specialist-activities/kt/publications/index.htm>.
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- National Research Council (1998) *Internet Counts: Measuring the Impacts of the Internet*. Washington: National Academy Press. <http://www.bsos.umd.edu/cidcm/papers/ewilson/xnasrep2.htm>.
16. For evidence of accessibility problems when downloading Word or PDF documents, see: Staff Writers (1999) 'Windows 95 remains most popular operating system in 1999.' In *CNET News.com*, July, 1999. <http://news.cnet.com/news/0,10000,0-1006-200-345114,00.html>.
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- Barrett, E., Levinson, D. and Lisanti, S. (2001) *The MIT Guide to Teaching Website Design*. London: MIT Press.
17. See Nielsen, J. (1999) *Voodoo Usability*. <http://www.useit.com/alertbox/991212.html>.
18. See <http://www2.imagiware.com/> for more information on Dr HTML. A single webpage analysis can be conducted at <http://www2.imagiware.com/RxHTML/>.
19. For more information about the World Wide Web Consortium, and for details of how invalid HTML can be fixed, visit <http://www.w3.org/>.
20. See <http://timothyhopkins.com/usability/downloadtimes.htm>.
21. Nielsen, J. (1999) *Voodoo Usability*. <http://www.useit.com/alertbox/991212.html>.

22. See Nielsen, J. and Landauer, T. (1993) 'A Mathematical Model of the Finding of Usability Problems.' In *Proceedings of ACM INTERCHI'93 Conference, 24-29 April, 1993*. Amsterdam: ACM.

23. See Nielsen, J. (1999) *Can't We Just Run a Survey*.
<<http://www.zdnet.com/devhead/stories/articles/0,4413,2224330,00.html>>.

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25. To make use of this service please contact <John@potempkin.demon.co.uk>.

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<<http://www.iisd.org>>.

27. See Thomas, L. (1994) *Urban Poverty and Development Interventions*. Occasional Paper Series No.4, 1994. Oxford: INTRAC.
<<http://www.intrac.org/pubs-books.htm#ops>>.

28. For evidence of Google's benefits as a search engine, see
<<http://www.google.com/technology/index.html>>.

29. Such as <<http://www.id21.org>> or <<http://www.eldis.org>>.

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Willard, T. (2001) Communicating Sustainable Development on the Web. IISD Draft Paper. Winnipeg: IISD. Available upon request from <<http://www.iisd.org>>.

33.A free GIF compression service is available from <<http://www.savei.net/gifcruncher.html>>.